

disappeared, and a severe storm of wind, with rain and snow, prevailed over the Lake region throughout the day. High southerly winds were also reported from the Middle and East Atlantic coasts. The storm passed over the mouth of the St. Lawrence on the 29th and disappeared over the Gulf on the 30th. Cautionary Signals were ordered on the 28th at noon from New York to Lewes, and at 4 p. m. from Lewes to Smithville, and from New York to Portland, which were generally justified as Cautionaries, and were subsequently changed to Off-shore and again justified. In the rear of this storm northerly winds prevailed over the southwest, and Cautionary Off-shore Signals were ordered on the 28th at 7 a. m., at Indianola and Galveston, and were justified. November 28th, Cleveland, "The most severe storm of the season; fences and trees blown down; lake very rough."

XVII.—This was an indefinite area of low pressure which appeared off the coast of British Columbia on the 29th and 30, where it was accompanied by southerly winds and rain. It appears to have passed eastward into British America. Its track is too indefinite to be charted on Map No. I.

No. XVIII.—This depression appears to have been central north of Dakota on the morning of the 30th, and was probably a branch of No. XVII. By midnight it was north of Lake Superior, while high southerly winds and occasional light snows were reported at several stations in the Lower Lake region. Its path is too indefinite to be traced on Map No. I.

INTERNATIONAL METEOROLOGY.

Three International Charts, Nos. IV, V and VI, accompany the present *Review*. No. IV indicates the probable course of low-pressure areas over the North Atlantic ocean and neighboring waters and continents during the month of October, 1879, and is based upon data received at this office up to November 30th, 1879. Nos. V and VI are charts for the month of April, 1878 and are based upon International Simultaneous Observations, as described in the *Review* for July, 1879, supplemented by such other observations as have been considered specially applicable and trustworthy.

Since the publication of the October *Review* valuable reports of observations relating to low-area No. V made at Cienfuegos, Baracoa and Sagua le Grand, Cuba, have been received through Mr. Vines, of Havana, but which do not change the track of centre as already given on Chart No. I for that month.

On Chart No. IV, the tracks of fifteen areas of low-pressure are traced, which, during a portion of their existence, were located over the North Atlantic and North Pacific oceans or neighboring waters. Portions of areas Nos. I, V, VI, XIII and XIV appeared on Chart No. I of October *Review*. No. II was over the eastern portion of the Gulf of Mexico during October 5th and 6th. There are decided indications of its existence during the 3rd and 4th, in the positions, as shown; on the 7th, it merged with an extensive depression over the Northwest. No. IV originated about mid ocean and, on the 11th, 12th and 13th, moved northward off the banks of Newfoundland as a very severe storm. It is probable that the depression which appeared to the northwest of the British Isles on the 16th, was a continuation of this area. Nos. V and VI appeared on Chart I of the October *Review* and are here reproduced, as it is probable that the area formed by their union, moved over the northern portion of the Atlantic, from the 20th to the 25th. Nos. I, III and from VII to XV, can only, as yet, be traced over the area shown.

TEMPERATURE OF THE AIR.

The general distribution of temperature for *November*, 1879, is shown by the isothermal lines upon Chart No. II, accompanying which is a table of comparative temperatures. Like the preceding month the average temperature of the present month has been above the normal in the districts east of the Rocky Mountains and below the normal in those to the westward. The departure from the normal, however, over the eastern portions of the country has not been so marked as it was for October. The excess is greatest from the Gulf coast to the Ohio and Upper Mississippi valleys, over which region it amounts to four or five degrees; in the Atlantic States, Lake region and along the eastern slope of the Rocky Mountains it varies from a half to one and a half of a degree. West of the Rocky Mountains the departure from the normal has been greater than last month and has amounted to —2.5 degrees along the Pacific coast and from —3 to —5 degrees in Utah and Idaho.

Minimum and Maximum Temperatures:—An examination of the minimum temperatures shows that they occurred, with few exceptions, from the 17th to the 22nd, during the regime of high areas Nos. VII and VIII, and ranged, during these days, from —9° at Pembina, Dak., to 39° at Brownsville, Tex.; from 0° at Alpena, Mich., to 32° at Pensacola, Fla.; and from 11° at Eastport, Me., to 60° at Key West. On the summit of Pike's Peak, the minimum (—15°) occurred on the 17th and 18th, and on the summit of Mount Washington (—20°) on the 20th. The exceptions to the above generalization occurred on the 4th in the Lake region; from the 24th to the 28th over the Pacific States, Plateau Districts and Montana, and from the 28th to the 30th, over the Eastern Slope of the Rocky Mountains and Texas. An examination of the maximum temperatures shows that they occurred, almost without exception, during the first half of the month. In the Pacific States, Plateau Districts, Eastern Rocky Mountain Slope, and northern part of the Northwest, they occurred from the 3rd to the 6th, and varied, as follows:—65° at San Francisco, Cal., 80° at Red Bluff, Cal., 67° at Winnemucca, Nev. and Salt Lake City, Utah, 76° at Denver, Col. and North Platte, Neb., and 44° at Breckinridge, Minn. Over the eastern portion of the United States, they occurred chiefly from the 8th to the 15th, and varied from 54° at Escanaba, Mich. and 55° at Eastport, Me., to 92° at Laredo, Tex. and 84° at Key West, Punta Rassa, and Augusta. The maximum on the summit of Pike's Peak (33°) occurred on the 6th, and on the summit of Mount Washington, (44°) on the 9th, 10th and 15th.